

Enrolment No.



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Pimpri Chinchwad University

Established under Govt. of Maharashtra Act No. V of 2023
Sate, Maval (PMRDA) Dist - Pune, Maharashtra - 412 106.



SCHOOL OF COMPUTER APPLICATIONS

DEPARTMENT OF MCA

ACADEMIC YEAR: - 2024-25(EVEN SEM.)

Class Test-I Examination – February- 2025

Program : MCA

Batch : 2024-2026

Semester: I

Maximum Marks: 20 marks

Date:-24th Feb 2025

Time: 1 Hr. (2:50 p.m. to 3:50 p.m.)

Course Name: Object Oriented Programming Using Java

Course Code: PMC109

Course Outcomes (CO):

1. Understand the fundamental concepts of Java
2. Object-oriented programming.
3. Implement Java classes, objects, and methods with appropriate constructors and access control.
4. Apply concepts of inheritance, method overriding,
5. Apply polymorphism.

Instructions:

- Solve all questions.
- Each question carries equal marks.

NotesSociety

Question	CO	BL	Marks
Q.1) Write a program to list all even numbers less than or equal to the number n. Take the value of n as input from user.	2	Applying	5 M
Q.2) Write a Java program to define a class Rectangle with length and breadth. Implement a constructor to initialize values and provide methods to calculate area and perimeter.	2	Applying	5 M
Q.3) Explain method overriding with an example program demonstrating its implementation in Java.	3	Analyzing	5 M
Q.4) Explain special features of Java? What is JVM And explain its role in Java execution.	1	Understanding	5 M

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SCHOOL OF COMPUTER APPLICATIONS

DEPARTMENT OF MCA

ACADEMIC YEAR: - 2024-25(EVEN SEM.)

Class Test-I Examination – February- 2025

Program: MCA

Batch: 2024-26

Semester: II

Maximum Marks: 20 marks

Date:-25th Feb 2025

Time: 1 Hr. (2:50 to 3:50)

Course Name: Big Data Analytics

Course Code: PMC111

Course Outcomes (CO):

1. To identify the usage of data on different big data ecosystems and understand Hadoop Components.
2. Demonstrate the Pig architecture and evaluation of pig scripts.
3. To describe the Hive architecture and execute SQL queries on sample data sets.
4. To apply knowledge of the process of transferring data between different file systems and to execute operations using sqoop.
5. To understand the concepts of indexing and use these concepts in Solr search engines. Implement and evaluate the data manipulation procedures using pig, hive, sqoop, Solr and develop an application.

Instructions:

1. Each question carries 5 marks.
2. Use diagrams wherever necessary.
3. Maintain clarity and structure in your answers.

Questions	CO	BL	Marks
All questions are compulsory.			
Q.1) What is Hadoop? Explain its key components (HDFS, MapReduce, and YARN) with their functions.	CO1	1	5 Marks
Q.2) Describe how Data Access, Integration, and Intelligence are utilized in Amazon's Big Data strategy. How do these functions contribute to Amazon's business success?	CO1	2	5 Marks
Q.3) What is Apache Pig? Describe its architecture and how it simplifies Big Data processing compared to traditional MapReduce.	CO2	2	5 Marks
Q.4) A shopping mall wants to identify high-spending customers who have spent more than ₹5000 in total. Using Apache Pig, describe the process of filtering such customers and build the necessary Pig Latin commands.	CO2	3	5 Marks

*****All the Best*****

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SCHOOL OF ENGINEERING & TECHNOLOGY/SCHOOL OF SCIENCE

DEPARTMENT OF MCA/BCA/BSc (Cyber Security)

ACADEMIC YEAR: - 2024-25 (EVEN SEM.)

Class Test-I Examination – February- 2025

Program : MCA-I

Batch : 2024-25

Semester: II

Maximum Marks: 20 marks

Date: - 27th Feb. 2025

Time: 1 Hr. (2:50 to 3:50)

Course Name: Computer Networks

Course Code : PMC113A

Course Outcomes (CO):

1. To interpret the different building blocks of the Communication network and its architecture.
2. To apply different types of switching networks and analyze the performance of network
3. To Understand and explain the Data Communications System and its components. By using different types of network topologies and protocols.
4. To enumerate the layers of the OSI model and TCP and IP. Explain the function(s) of each layer.
5. To Identify the different types of network devices and their functions within a network

Instructions:

1. All questions are compulsory and carry equal marks.
2. Draw the diagram wherever necessary.

Question	CO	BL	Marks
1. Explain the OSI reference model in detail, describing the function and responsibilities of each of its seven layers.	1	2	5 Marks
2. Define multiplexing in the context of data communication. Explain Time Division Multiplexing (TDM), Frequency Division Multiplexing (FDM)	1	1,2	5 Marks
3. Discuss the error detection and correction. Explain types of errors?	2	1,4	5 Marks
4. A bit stream 10110011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1 . What is the actual bit string transmitted?	4	4	5 Marks

*****Best of Luck*****

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SCHOOL OF COMPUTER APPLICATIONS
DEPARTMENT OF MCA/BCA/BSc (Cyber Security)
ACADEMIC YEAR: - 2024-25(EVEN SEM.)

Class Test-I Examination – February- 2025

Program : MCA

Batch : 24-26

Semester: II

Maximum Marks: 20 marks Date:-28th Feb 2025

Time: 1 Hr.(2:50 to 3:50 p.m.)

Course Name: Optimization Techniques

Course Code : PMC114 / BSC

Course Outcomes (CO):

1. To Understand the role and principles of optimization techniques in business world (Understand)
2. To Demonstrate specific optimization technique for effective decision making (Apply)
3. To Apply the optimization techniques in business environments (Apply)
4. To Illustrate and infer for the business scenario (Analyze)
5. To Analyze the optimization techniques in strategic planning for optimal gain. (Analyze)

Instructions:

Question		CO	BL	Marks
Each question carries equal marks.				
Q1.	A) Find solution using graphical method MAX $z = 40x_1 + 80x_2$ subject to $2x_1 + 3x_2 \leq 48$ $x_1 \leq 15$ $x_2 \leq 10$ and $x_1, x_2 \geq 0$	CO1	4	10 Marks
	B) Find solution using Two-Phase method MIN $Z = 5x_1 + 2x_2 + 10x_3$ subject to $x_1 - x_3 \leq 10$ $x_2 + x_3 \geq 10$ and $x_1, x_2, x_3 \geq 0$	CO1	4	10 Marks

A) Critical path, Total float, Free float, Independent float

1-2	A	4
2-3	B	6
2-4	C	2
3-4	d	0
3-6	D	2
4-5	E	7
5-6	F	4
6-7	G	8
7-8	H	3

CO2 5

10 Marks

Q2.

Project scheduling with uncertain activity times (Optimistic, Most likely, Pessimistic)

1-2	A	1	1	7
1-3	B	1	4	7
1-4	C	2	2	8
2-5	D	1	1	1
3-5	E	2	5	14
4-6	F	2	5	8
5-6	G	3	6	15

CO2 5

10 Marks

B) The network diagram for the project

C) Calculate the critical path and total duration of project

D) What is the probabilities of completion the project on or before 22 Week